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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,761	06/27/2003	William S. Jacobs	D/A2351	7407

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EXAMINER	
KAU, STEVEN Y	
ART UNIT	**PAPER NUMBER**
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/607,761	JACOBS ET AL.	
	Examiner	Art Unit	
	Steven Kau	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7-9* is/are allowed.

6)☒ Claim(s) *1-6,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in responsive to applicant's amendment filed on May 9, 2007. Claim 1 has been amended, and claims 10 and 11 have been added as dependent claim s to Claim 1. Claims 1-11are now pending.

Response to Arguments

2. This action is responsive to the following communication: an Amendment filed on May 9, 2007.

- Claim 1 has been amended.
- Claims 1-11are now pending.
- Applicant's arguments filed on March 26, 2007 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-6 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (Chang) (US 2002/0097419) in view of Parker et al (Parker) (US 6,307,962) and Kannapell et al (Kannapell) (US 4,593,325).

With regard to claim 1, Chang discloses an information apparatus for universal data output, in that he teaches a method for implementing a raster image path architecture {e.g. a block diagram illustrating hardware/software} (Figures 3A & 3B, Par. 0099), comprising the steps of: (1) capturing a source image {e.g. digital capturing device such as digital camera} (Par. 0004) so as to provide device-independent grayscale image data (Par 0004 & Par. 0249); (3) storing the device-independent grayscale image data {e.g. Chang teaches a Universal Data Output system, in particular a MRC system for outputting either a device-dependent (binary) image or a device-independent (grayscale) image. Chang teaches an image stored in MRC system} (Par. 0084 & Par. 0085) the associated segmentation information (Par 0076 & Par. 0086); and (5) submitting the binary raster image to the targeted output device (Figures 1A & 7A-7F, Par 0030).

Chang differs from claim 1, in that he does not explicitly teach (2) generating associated segmentation information useful for optimal rendering of the image data as a binary image; (3) wherein the storing includes compressing the grayscale image data and the associated segmentation information and (4) determining a target output device and using the segmentation information to convert the device-independent grayscale image data to a binary raster image optimized for the targeted output device.

Parker discloses a document compression system, in that he teach (2) generating associated segmentation information useful for optimal rendering of the image data as a binary image (Figures 3, 6A & 6B, col 5, lines 5-41 & lines 66-67); and

wherein the storing includes compressing the grayscale image data and the associated segmentation information (Figure 1, col 6, lines 33-65).

Kannapell discloses an adaptive threshold, in that he teaches (4) determining a target output device and using the segmentation information to convert the device-independent grayscale image data to a binary raster image optimized for the targeted output device (Col 2, lines 9-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Chang to include (2) generating associated segmentation information useful for optimal rendering of the image data as a binary image; (3) wherein the storing includes compressing the grayscale image data and the associated segmentation information taught by Parker because the image data format enables storage of documents and the storage format also facilitates processing of segments according to their image types (col 4, lines 35-29), and to include determining a target output device and using the segmentation information to convert the device-independent grayscale image data to a binary raster image optimized for the targeted output device taught by Kannapell to improve techniques for generating adaptive grayscale image data thresholds and to provide attractive and inexpensive alternatives (col 2, lines 1-6).

With regard to claim 2, Chang teaches performing computational intensive RIP operations (Par. 0123).

Chang differs from claim 2, in that he does not teach converting the device-independent grayscale raster image data to a targeted device-dependent binary raster image.

Kannapell teaches converting the device-independent grayscale raster image data to a targeted device-dependent binary raster image (Col 2, lines 9-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Chang to include converting the device-independent grayscale raster image data to a targeted device-dependent binary raster image taught by Kannapell to improve techniques for generating adaptive grayscale image data thresholds and to provide attractive and inexpensive alternatives (col 2, lines 1-6).

With regard to claim 4, Chang teaches that an image stored in MRC includes more than one image or bitmap layers {e.g. layers are interpreted as planes} (Par. 0086).

Chang differs from claim 4, in that he does not teach the step of determining the segmentation information inherent in the device-independent N-plane grayscale raster image data for converting the device-independent N-plane grayscale raster image data into a targeted device-dependent binary raster image.

Parker teaches the step of determining the segmentation information inherent in the device-independent N-plane grayscale raster image data (Figures 3, 6A & 6B, col 5, lines 5-41 & lines 66-67).

Kannapell teaches for converting the device-independent N-plane grayscale raster image data into a targeted device-dependent binary raster image (col 2, lines 1-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Chang to include the step of determining the segmentation information inherent in the device-independent N-plane grayscale raster image data taught by Parker because the image data format enables storage of documents and the storage format also facilitates processing of segments according to their image types (col 4, lines 35-29, Parker), and to include converting the device-independent N-plane grayscale raster image data into a targeted device-dependent binary raster image taught by Kannapell to improve techniques for generating adaptive grayscale image data thresholds and to provide attractive and inexpensive alternatives (col 2, lines 1-6, Kannapell).

With regard to claim 5, differs from claim 5, in that he does not teach the step of converting of the device-independent grayscale raster image data and associated segmentation information to targeted device-dependent binary raster image data with operation of an intermediate compute platform according to the determination of the targeted output device.

Kannapell teaches the step of converting of the device-independent grayscale raster image data and associated segmentation information to targeted device-dependent binary raster image data with operation of an intermediate compute platform

according to the determination of the targeted output device (Figures 3, 7 & 8 col 3, lines 21-36, col 4, lines 18-28, col 5, lines 18-19 & col 7, lines 16-22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Chang to include the step of converting of the device-independent grayscale raster image data and associated segmentation information to targeted device-dependent binary raster image data with operation of an intermediate compute platform according to the determination of the targeted output device taught by Kannapell to improve techniques for generating adaptive grayscale image data thresholds and to provide attractive and inexpensive alternatives (col 2, lines 1-6).

With regard to claim 6, Chang teaches that the targeted output device further comprises a printer (Figures 7a-7F, Par. 0172).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (Chang) (US 2002/0097419) in view of Parker et al (Parker) (US 6,307,962) and Kannapell et al (Kannapell) (US 4,593,325) as applied to claims 1-2 &4-6, and further in view of Penn (US 5,848,198).

With regard to claim 3, Chang differs from claim 3, in that he does not teach that the step of generating the device-independent grayscale image data in the form of device-independent N-plane grayscale raster image data.

Penn discloses a method and apparatus for analyzing image, in that he teaches, in that he teaches the step of generating the device-independent grayscale image data

in the form of device-independent N-plane grayscale raster image data (col 13, lines 65-67 & col 14, lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Chang to include the step of generating the device-independent grayscale image data in the form of device-independent N-plane grayscale raster image data taught by Penn because gray-scale planes are more easily segmented and modeled (Abstract).

6. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (Chang) (US 2002/0097419) in view of Parker et al (Parker) (US 6,307,962) and Kannapell et al (Kannapell) (US 4,593,325) as applied to claims 1-2 &4-6, and further in view of Yamada (US 2004/0234148).

With regard to claim 10, Chang differs from claim 10, in that he does not teach the compressing includes loss compression of the grayscale image data.

Yamada discloses an image encoding method, in that he teaches the compressing {e.g. encoding} includes loss compression of the grayscale image data {e.g. lossy encoding is applied to the grayscale alpha plane} (Par. 0019).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Chang to include the compressing includes loss compression of the grayscale image data taught by Yamada to reduce mosquito noise and reproduce a clear image (Par. 0001).

With regard to claim 11, Chang differs from claim 11, in that he does not teaches the compressing includes lossless compression of the associated segmentation information.

Yamada teaches the compressing includes lossless compression of the associated segmentation information (Par. 0019).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Chang to include the compressing includes lossless compression of the associated segmentation information taught by Yamada to reduce mosquito noise and reproduce a clear image (Par. 0001).

Allowable Subject Matter

7. Claims 7-9 are allowed.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Kau whose telephone number is 571-270-1120 and fax number is 571-270-2120. The examiner can normally be reached on Monday to Friday, from 8:30 am -5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Kau
Patent Examiner
Division: 2625
July 16, 2007

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Supervisory Patent